LISTING OF THE CLAIMS

With this claim listing, including the new claims presented herein, Applicants replace any previous listing of the claims of the above-referenced patent application.

1. (Original) A method for mitigating interference caused by ghost signals generated by an antenna array system, the method comprising:

determining an effective weight of a ghost signal; and

obtaining a downlink beamforming strategy as a function of the effective weight, the downlink beamforming strategy for transmitting a downlink signal to a receiver, wherein the downlink beamforming strategy provides an interference mitigated region at a location susceptible to interference caused by the ghost signal.

2. (Original) The method of claim 1, further comprising:

calibrating the antenna array system to determine a non-linear characteristic of the antenna array system; and

determining the effective weight based on the non-linear characteristic of the antenna array system.

3. (Original) The method of claim 1, further comprising:

determining a non-linear characteristic of the antenna array system; and

determining the effective weight based on the non-linear characteristic of the antenna array system.

4. (Original) The method of claim 1, further comprising:

varying the intensity of the interference mitigate region.

5. (Original) The method of claim 1, wherein the ghost signal is at least in part caused by transmitter intermodulation.

6. (Original) The method of claim 1, wherein the ghost signal affects a channel on which the downlink signal is transmitted.

7. (Original) The method of claim 1, wherein the downlink signal is transmitted on a first channel.

8. (Original) The method of claim 7, wherein the ghost signal affects a second channel.

9. (Original) The method of claim 7, wherein the ghost signal further affects the first channel.

10. (Original) The method of claim 9, wherein the first channel is utilized by first remote user terminal at the location.

A2

11. (Original) The method of claim 10, wherein the first channel is further utilized by a second remote user terminal at a different location.

12. (Original) A method for mitigating interference caused by ghost signals generated by an antenna array system, the method comprising:

obtaining a first weight for a first downlink signal;

obtaining a second weight for a second downlink signal;

determining a characteristic of a ghost signal that would result by the interaction of transmitting the first and second downlink signals; and

adjusting the second weight to mitigate the ghost signal.

13. (Original) The method of claim 12, further comprising:

calibrating the antenna array system to determine a non-linear characteristic of the antenna array system; and

determining the characteristic based on the non-linear characteristic of the antenna array system.

14. (Original) The method of claim 12, further comprising:

determining a non-linear characteristic of the antenna array system; and

determining the characteristic based on the non-linear characteristic of the antenna array system.

15. (Original) The method of claim 12, wherein the ghost signal is at least in part caused by transmitter intermodulation.

16. (Original) The method of claim 12, wherein the ghost signal affects a channel on which the at least one of the first and second downlink signals is transmitted.

17. (Original) The method of claim 12, wherein the first and second downlink signals occupy the same channel.

A2

18. (Original) The method of claim 12, wherein the first and second downlink signals occupy different channels.

19. (Original) The method of claim 12, wherein the characteristic is determined in an iterative manner.

20. (Original) A method for reducing ghost signal interference caused by a transmitter employing an antenna array, the method comprising:

determining that transmission of at least a first downlink signal by the transmitter will produce a ghost signal;

adjusting a downlink weight corresponding to the first downlink signal to mitigate the ghost signal; and

transmitting the first downlink signal in accordance with the downlink weight.

21. (Original) The method of claim 20, wherein the ghost signal is mitigated at a first location corresponding to a first remote user terminal.

22. (Original) The method of claim 21, wherein the downlink signal is intended for the first remote user terminal.

23. (Original) The method of claim 21, wherein the downlink signal is intended for the first remote user terminal, and the ghost signal is mitigated at a second location corresponding to a second remote user terminal.

24. (Original) The method of claim 23, wherein the transmitter transfers information with the first and second remote user terminals utilizing the same communication channel.

25. (Original) The method of claim 24, wherein the first and second remote user terminals are distinguished by the transmitter by spatial channels.

A2 26. (Original) The method of claim 23, wherein the transmitter utilizes a first and a second channel for communicating with the first and the second remote user terminals, respectively, wherein the first and second channels are distinct from each other.

27. (Original) The method of claim 26, wherein the first and second channels are adjacent channels with respect to each other.

28. (Original) A machine-readable medium having stored thereon a set of instructions, which, when processed by a machine, cause the machine to perform a method for reducing ghost signal interference caused by a transmitter employing an antenna array, the method comprising:

determining that transmission of at least a first downlink signal by the transmitter will produce a ghost signal;

adjusting a downlink weight corresponding to the first downlink signal to mitigate the ghost signal; and

transmitting the first downlink signal in accordance with the downlink weight.

29. (Original) The medium of claim 28, wherein the ghost signal is mitigated at a first location corresponding to a first remote user terminal.

30. (Original) The medium of claim 28, wherein the downlink signal is intended for the first remote user terminal.

31. (Original) The medium of claim 29, wherein downlink signal is intended for the first remote user terminal, and the ghost signal is mitigated at a second location corresponding to a second remote user terminal.

32. (Original) The medium of claim 31, wherein the transmitter transfers information with the first and second remote user terminals utilizing the same communication channel.

33. (Original) The medium of claim 32, wherein the first and second remote user terminals are distinguished by the transmitter by spatial channels.

34. (Original) The medium of claim 31, wherein the transmitter utilizes a first and a second channel for communicating with the first and the second remote user terminals, respectively, wherein the first and second channels are distinct from each other.

35. (Original) The medium of claim 34, wherein the first and second channels are adjacent channels with respect to each other.

36. (New) A processing circuit for use with a transmission system employing an antenna array system, comprising:

an input port to receive a first weight for a first downlink signal and a second weight for a second downlink signal;

a processing circuit responsive to the port to determine a characteristic of a ghost signal that would result by the interaction of transmitting the first and second downlink signals and adjust the second weight to mitigate the ghost signal; and

an output port to transmit the first weight and the second weight to the antenna array system.

37. **(New)** The processing circuit of claim 36, wherein the processing circuit comprises a spatial processor.

38. **(New)** The processing circuit of claim 36, wherein the processing circuit calibrates the antenna array system to determine a non-linear characteristic of the antenna array system determines the characteristic based on the non-linear characteristic of the antenna array system.

39. **(New)** The processing circuit of claim 36, wherein the processing circuit further determines an intermodulation that would occur when transmitting the first downlink signal and the second downlink signal and adjusts the second weight to correct transmitter intermodulation.